

Notice of Allowability

Application No.

10/719,564

Examiner

Mark Ruthkosky

Applicant(s)

IMASEKI ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/21/2007.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

MARK RUTHKOSKY
PRIMARY EXAMINER

Mark Ruthkosky 6/10/07

DETAILED ACTION

Response to Amendment

This paper is in response to applicant's amendment filed 3/21/2007

Claim Rejections - 35 USC § 102

The rejection of claims 1 and 7 under 35 U.S.C. 102(e) as being anticipated by Ap et al. (US 6,595,433) has been overcome by applicant's amendment.

Claim Rejections - 35 USC § 103

The rejection of claims 3, 5, and 9 under 35 U.S.C. 103(a) as being unpatentable over Ap et al. (US 6,595,433 and 2002/0053216) in view of Hobbensiefken (US 3,929,202) has been overcome by applicant's amendment.

Claims 2, 4, 6, 8 and 10 under 35 U.S.C. 103(a) as being unpatentable over Ap et al. (US 6,595,433 and 2002/0053216) in view of Ap (US 6,448,535) and further in view of Hobbensiefken (US 3,929,202) and Morinaka et al. (US 4,632,206.)

Allowable Subject Matter

Claims 1-10 are allowed.

The following is an examiner's statement of reasons for allowance:

The instant claims are to a cooling structure for a fuel cell vehicle comprising a fuel cell a drive motor for driving the fuel cell vehicle using the energy generated by the fuel cell; a first

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cooling flow passage for cooling the fuel cell using a first cooling medium cooled by a main radiator; and a second cooling flow passage for cooling at least one of the drive motor and a power control unit of the drive motor using a second cooling medium cooled by an auxiliary radiator, wherein the second cooling flow passage is thermally independent from the first cooling flow passage and wherein the main radiator is disposed in a central portion of a front surface of a vehicle body and the auxiliary radiator is disposed on the front surface of the vehicle body in such a manner that its heat exchange surface is situated shifted in a vehicle-width direction so as to prevent it from being overlapped with a heat exchange surface of the main radiator.

The prior art does not teach a cooling structure in a fuel cell vehicle as claimed. The most pertinent prior art includes Ap et al. (US 6,595,433 and 2002/0053216), which teach a cooling structure for a fuel cell vehicle comprising a fuel cell a drive motor for driving the fuel cell vehicle using the energy generated by the fuel cell; a first cooling flow passage for cooling the fuel cell using a first cooling medium cooled by a main radiator; and a second cooling flow passage for cooling at least one of the drive motor using a second cooling medium cooled by an auxiliary radiator. The front surface of the vehicle is considered to be the direction of airflow. The main radiator is disposed in a central portion of a front surface of a vehicle body and the auxiliary radiator is disposed on the front surface of the vehicle body in such a manner that its heat exchange surface is situated shifted in a vehicle-width direction so as to prevent it from being overlapped with a heat exchange surface of the main radiator. The radiator is divided into two parts that are sealed from one another and together.

Ap does not teach a cooling structure for a fuel cell vehicle comprising a fuel cell a drive motor for driving the fuel cell vehicle using the energy generated by the fuel cell; a first cooling

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flow passage for cooling the fuel cell using a first cooling medium cooled by a main radiator; and a second cooling flow passage for cooling at least one of the drive motor and a power control unit of the drive motor using a second cooling medium cooled by an auxiliary radiator, wherein the second cooling flow passage is thermally independent from the first cooling flow passage.

That Ap reference teaches the cooling passages are integrated and include the same coolant in each passage and the same pump pumping the fluids. Further, Ap et al. does not teach the radiator to face obliquely forwardly and outwardly or that the main radiator is disposed on a front surface of the vehicle body so as to extend substantially over a vehicle-width-direction entire area existing between a pair of right and left main frames respectively disposed along back-and-forth direction of the vehicle body, and the auxiliary radiator is disposed on the front surface of the vehicle body in such a manner that it is situated outside the main frames.

As the prior art does not teach a cooling structure for a fuel cell vehicle comprising a fuel cell a drive motor for driving the fuel cell vehicle using the energy generated by the fuel cell; a first cooling flow passage for cooling the fuel cell using a first cooling medium cooled by a main radiator; and a second cooling flow passage for cooling at least one of the drive motor and a power control unit of the drive motor using a second cooling medium cooled by an auxiliary radiator, wherein the second cooling flow passage is thermally independent from the first cooling flow passage, the claims are allowed. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Examiner Correspondence


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

Mark Ruthkosky

Primary Patent Examiner

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 6.10.2007